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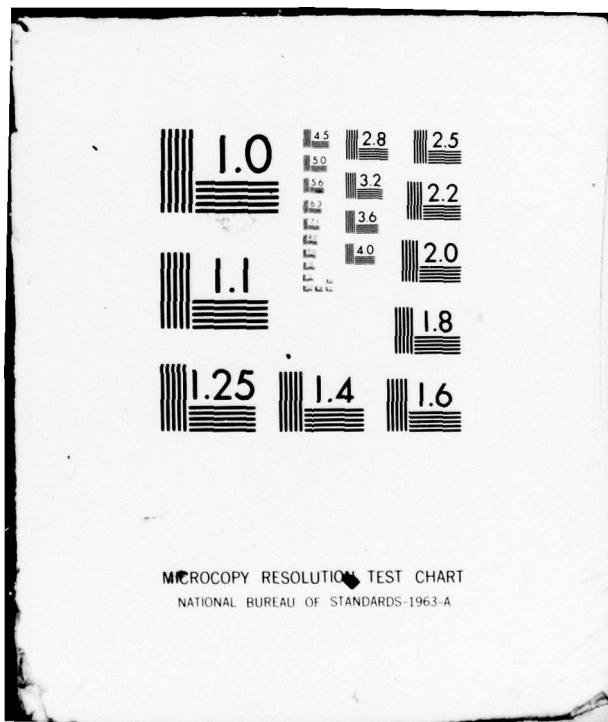
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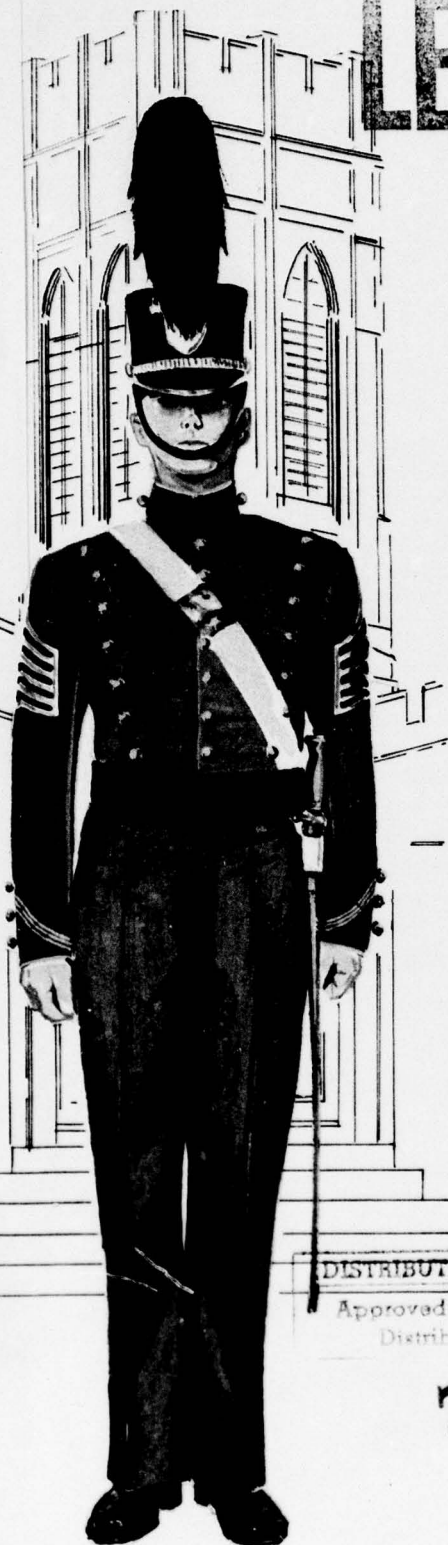


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# UNITED STATES MILITARY ACADEMY

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DIFFERENCES BETWEEN  
CHARACTERISTICS OF  
MEN AND WOMEN  
NEW CADETS

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Project No. 211

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Differences Between Characteristics of  
Men and Women New Cadets,  
Class of 1980

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ABSTRACT

This report compares men and women cadets in the Class of 1980 at the time they entered West Point in the Summer of 1976 on a wide variety of measures. It reports similarities and differences in physical and mental aptitudes, background, motivation, and attitudes. The largest differences, in absolute terms, are associated with physical aptitude. Among attitude variables the two genders were equal in military career motivation but very different in attitudes toward the role of women in society. The limitations and implications of the findings are discussed in the body of the report.

NOTE: Any conclusions in this report are not to be construed as official U.S. Military Academy or Department of the Army positions unless so designated by other authorized documents.

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## PREFACE

Project Athena is a long term, comprehensive research project sponsored jointly by the Office of the Deputy Chief of Staff for Personnel and the United States Military Academy. The objective of the project is to provide a series of research reports which determine through systematic research the impact of the admission of women to West Point on the Academy and on the individual cadet. The project is co-directed by Dr. Nora Scott Kinzer of the Army Research Institute and Captain Alan G. Vitters of the Office of Military Leadership, USMA. Also contributing to the research are Dr. Robert F. Priest of the Office of the Director of Institutional Research, USMA; Major Howard Prince (Ph.D.), Captain Teresa Rhone (Ph.D), and Captain David Ohle of the Office of Military Leadership, and Major Boyd M. Harris of the Department of Tactics.

Differences Between Characteristics of  
Men and Women New Cadets  
Class of 1980

PURPOSE & SCOPE OF THIS REPORT: Since 1802, West Point has provided leadership training for men, primarily oriented toward combat leadership. On October 8, 1975 the President signed the law which directs the Military Academies to provide women with equal opportunities. The law explicitly mandates equality in standards of admission, training, graduation, and commissioning, except for minimum essential adjustments required because of physiological differences between men and women.

The purpose of this report is to report on the degree of similarity between men and women cadets who were admitted to the first integrated class in West Point history, the Class of 1980. It reports on physical, anthropometric differences; differences in family background; high school background; interests; intellectual ability; motivation for West Point; self-concepts and personality variables; and attitudes of the people to traditional women's roles and to the process of integration itself.

This report provides a complete picture of the measureable differences between men and women new cadets at the time they entered the Military Academy in July 1976. Several limitations should be noted at the outset. First, some of the data that were collected have not yet been completely analyzed. Therefore, there may be more trait differences which will be disclosed in future reports. Second, although one may make reasonable guesses as to the origin and significance of the differences reported here, there is no feasible method of verifying the hypothesized causal relationships. Any of the sex differences reported below could be the result of physiological differences which according to law, would justify a deviation from a policy of strict equality. Alternatively, any of the differences could be the result of differences in the cultural conditioning of boys and girls as they grow up. Finally, the differences might be due to unconscious bias in the recruitment procedures of West Point. In discussing the results, the report makes reasonable guesses as to the source and possible impact of the differences by referring to scholarly articles, and uses other available information. Nevertheless, the readers would regard the "causes" as reasonable hypotheses bearing further study. Obviously, the next class of cadets may show a different picture.

Many people have contributed to the study of trait differences between the sexes at West Point. Their work is gratefully acknowledged here. More specific references are given in the discussion below.

This report follows the established scientific practice of reporting statistically significant differences. Thus, any difference discussed in this report is probably not the result of chance, or not due to the particular sample of women and men cadets in the Class of 1980. Experienced research workers know that it is relatively easy to discover statistically significant differences when one is working with large samples such as the plebe class. Therefore, wherever it is appropriate, this report provides an estimate of the percentage of female cadets who equal or surpass male performance on a given variable. The details of such an estimate are given in the methodology section of this report. The purpose of such an estimate is to provide the reader with a way of assessing the magnitude of any particular group difference. For an executive summary of the highlights of this report the reader should turn to page 17.

METHOD

SOURCES OF DATA: On July 7, 1976, 119 women and 1366 men entered the Class of 1980. Data on the academic aptitudes, physical aptitudes, and leadership potential were collected by the Office of Admissions prior to entrance (Houston 1976). On July 8 and 9,



the cadets were given a series of questionnaires administered by the Director of Institutional Research: (1) Maudsley Personality Inventory (2) The ACE Student Information Form (3) Parent's Address Information Form (4) Parent's Background (5) Prior Service Information (6) Varsity Sports Inventory (7) Class Characteristics Inventory (CCIN) (8) New Cadet Questionnaire (NCQ) (9) Addendum to New Cadet Questionnaire (10) Tennessee Self Concept Scale (TENSELF). These were the principle sources of data on cadets.

ANALYSES AND DATA PROCESSING: Differences between the sexes in admissions variables and in varsity sports participation were reported in Houston (1976). The findings will be summarized in this report, but the tables will not be duplicated.

Data from the ACE Student Information form are ordinarily sent to the ACE in October for processing. Because of high interest in the profile of selected characteristics of women cadets, data for 116 female cadets were tallied by hand. In Priest (1976a), the data for women in the Class of 1980 were compared to the data for previously entering male cadets, and to ACE National Norms on the same items.

Religion and state of birth were obtained from the Parent's Address Information Forms. The detailed religion codes were collapsed into more general categories of Protestant, Roman Catholic, Jewish, Other, so that they would be more comparable to Gallup Poll data (Gallup Opinion Index, May 1976). State of birth categories were collapsed into U.S. Census Divisions and Regions. Since most entering cadets were born in 1958, state of birth information from the 1960 Census was used for purposes of comparison.

The Parent's Background Form provided the occupation of the entering cadet's mother and father. The USMA occupation list consists of 62 titles, and resembles the occupation list used on the ACE Student Information Form. The civilian occupations were classified into ten major occupational groups used by the U.S. Census (except Transport Operatives were included under Operatives and Private Household Workers were included under Service Workers). To enable comparisons with the Classes of 1961-65, which Marron studied (1972), professional occupations were further classified as socially oriented, technical and artistic. Percentage distributions for civilian occupations exclude cadets whose parent's occupation was military, homemaker, unemployed or other; thus comparisons to U.S. Census data is appropriate.

The Parent's Background Form also provided information on the parent's service component, rank, and military service status. In reporting parent's service component, three major categories are used: (1) Those who had no service (2) Those who served in the Army, Navy, Air Force or Marines (3) All others. In reporting parent's military service status, three categories are reported: (1) Those with no service or "don't know" (2) Those who had a military career - retired after 20 years or for disability, or now on active duty (3) All others. It should be noted that this is a broad definition of military career, and does not agree with subject's reports based on either the USMA occupation list, or the ACE occupation list. For example, using military service status 26.5% of the female cadets had fathers who were military careerists; using the USMA occupation title list method, 17.9%; using the ACE occupation title list, 20% (Priest 1976c). Future research will need to resolve this apparent discrepancy. In this report, the results from the ACE occupation survey will not be reported, since the USMA figures at the present time are more reliable.

Preliminary tests of differences between male and female responses to items in the "Class Characteristics Questionnaire" and the "New Cadet Questionnaire" were based on 1277 males and 115 females. Thus the records of 89 male cadets and 4 female cadets were not included in the analysis because their cadet number was missing, miscoded, or otherwise unavailable for matching (9/16/76 analysis). It is assumed the loss of records was not related to Cadet Characteristics, and thus does not bias the sample that remains.

The New Cadet Questionnaire and Addendum (NCQ) included a total of 318 items. Not enough time had been allowed for everyone to finish, and as a result only 83% of the men answered items 303-318. Because incomplete questionnaires may bias comparisons between groups, certain analyses excluded records with too much missing information. In one instance (10/16/76; File DSR211J2) the analysis was restricted to records on which all items were completed, and resulted in a sample of 816 males and 85 females. In a second instance, (10/21/76; File DSR211J2) the analysis was restricted to records in which the individual had completed the last 3 items on the CCIN and the last 3 items on the NCQ, resulting in a sample of 980 male and 102 female cadets.

Half of the new cadets were tested on July 8, and half were tested on July 9. A preliminary analysis suggested that there may have been differences in test results, caused by exposure to an extra day of Cadet Basic Training (Priest 1976b). In order to separate the effects of sex and day of testing, an analysis of variance was conducted for each item, using planned contrasts to simulate a 2x2 factorial design, with tests for sex, day of testing, and sex and day interaction. In general, the more detailed analysis supported and clarified the report cited above (10/16/76 and 10/20/76; Analysis of File DSR211J2).

MEASURING THE MAGNITUDE OF THE DIFFERENCE: In this report, statistical significance at the .05 level is the criterion for including items for discussion. The experienced researcher knows, however, that large samples produce many items with "significant" but non-important differences. To evaluate the many differences this report will present an estimate of the percentage of females who achieve a certain level of performance, wherever it is meaningful to compare means by a t-test. In every case, the "performance standard" is arbitrarily defined as that standard which 66% of the male group exceeds. This technique was introduced and discussed in a previous report (Priest 1975). Nevertheless, it is an unconventional measure, and therefore the discussion below provides additional explanation.

In psychological literature, magnitude-of-difference is often measured by the percentage of the variance which the between-groups classification variable explains. One such measure is the omega squared measure of percent of explained variance advocated by Hays (1962, p 325). The authors feel that percentage of explained variance measures are often misleading. When the dependent variable is a well established test of known validity, the concept of explained variance is meaningful. But when the dependent variable is a single questionnaire item, or a scale of unknown validity, the "variance" to be explained may contain much irrelevant, invalid variance. Therefore, a simpler more easily interpretable measure of magnitude of difference is required. In this application, it is assumed that the items being compared have a normal distribution. It is felt that the percent of female cadets who "pass" a certain performance "standard" relative to male cadets provides a directly interpretable statistic. Where percentages are being compared directly (rather than item means), it is felt there is no need for an additional measure of magnitude of differences and therefore, none will be reported for such items. As a general rule, when two percentages differ by more than 10%, for the sample sizes of 119 and 1366 used here, they are statistically significant.

CONSTRUCTION OF ATTITUDE SCALES: This paper reports differences between men and women on a number of scales designed to measure motivation, attitudes to women's roles, and various personality traits. This section of the report explains the rationale, scholarly references, and scaling of the multi-item scales. Table 1 shows the minimum, maximum,



mean and standard deviation, and high score interpretation of 29 scales used in this study. Some readers may want to skip to the results section before returning to this section for further study.

MCCOG is a measure of military commitment. AGCOG is a similar measure of desire to graduate from the Military Academy. Both measures were developed by Bridges (1969a,b). A number of institutional research reports have presented data concerning the reliability, stability, and validity of these two measures (Butler & McLaughlin 1971; Butler 1973a, 1973b).

ROTTERIE (Rotter I-E Scale) is a 29-item measure of generalized expectancies for internal versus external control of reinforcement, developed by Rotter in 1966. It is a well established measure in the field of social and personality research. It was included in this study to test the hypothesis that high scores would correlate negatively with achievement. Individuals who are internal should be predisposed to be more effective than externals in leadership situations. Relationships between ROTTERIE Scores and LES should be studied over time.

TSBI stands for the Texas Social Behavior Inventory, developed by Robert Helmreich and his colleagues at the University of Texas in 1974 (Helmreich, Stapp, and Erwin, 1974; Helmreich and Stapp 1974). This scale is a measure of self-esteem reflecting the factors of confidence, dominance and social competence. It also reflects social withdrawal for males and relations to authority figures for females. The TSBI is strongly correlated with the Personal Attributes Questionnaire (PAQ) described below. TSBI scores predict self-perceptions of masculinity and femininity as well as interpersonal attraction, both of which can be related to desirable, effective leadership characteristics.

ANDRM and ANDRF are measures of self-concept, based on the short version of Spence's Personal Attributes Questionnaire (Spence, Helmreich and Stapp, 1974). ANDRM includes most of the items which Spence terms "Male-Valued," ( $r = .92$ , in one sample). ANDRF includes all of the items which Spence terms "Female-valued," ( $r = .78$ , in one sample). ANDRM and ANDRF intercorrelate  $-.13$  for males and  $-.17$  for females. It is concluded that ANDRM and ANDRF are relatively independent measures, which are functional analogies of the Spence Male-valued and Female-valued self-concept scales.

ANDRM and ANDRF are psychological measures of self-perception along two essentially independent dimensions which appear to be related to self-confidence and general level of adjustment in an additive fashion. Although much of the existing literature refers to the two dimensions as "masculinity" and "femininity", these terms are often mistakenly associated with socially determined sex-role stereotypes. ANDRM and ANDRF are not measures of stereotypes. They can most meaningfully be thought of in terms of an instrumental vs expressive dimension which can in turn be linked to the distinctions between job or task orientation vs welfare or group maintenance usually found in discussions of leadership theory and effective leader behavior. A third concept, psychological androgeny will be useful and refers simply to the extent to which individuals show various degrees of the four possible combinations of the two dimensions, ANDRM and ANDRF. Attributes which are associated with the instrumental (active or executive in nature) dimension include items such as the following: independent, competitive, self-confident. Attributes associated with the expressive dimension (social, affiliative, interpersonal in focus) include items such as these: gentle, kind, aware of feelings of others. Spence has shown that the two dimensions are relatively independent and psychometrically sound in other relevant ways. It was predicted that high scores for women on the instrumental dimension would be associated with increased likelihood of success as a cadet and that low scores on the instrumental dimensions would predispose women to early attrition. Relationships between PAQ scores and LES as well as other predictions have been made and will be tested and presented in future reports.



TESTANX is a 16-item measure of test anxiety. It is based on the work of Sarason (1975), and was included in the CBT testing because it measures performance anxiety in test-taking situations and provides a validity check for locally developed measures of performance anxiety such as the "fear survey schedule." Additionally it is a screening device to identify high test anxious cadets to participate in a voluntary counseling program to reduce test anxiety and improve academic performance.

AWS is a measure of traditionalism in attitude toward the rights and roles of women in contemporary society (Spence, Helmreich, and Stapp 1973; Spence and Helmreich 1972). High scores represent liberal equalitarian attitudes, and low scores represent traditional conservative attitudes. It was included to measure changes in attitudes of men and women toward women's roles in society. It was hypothesized that over time all cadets would become more liberal and equalitarian as they are exposed to the progress of women cadets at West Point.

WFO is a 19-item measure developed by Janet Spence and Robert Helmreich (Helmreich, Beane, Lucker, Spence in press). Called the "Work and Family Orientation Scale", WFO is a measure of an individual's belief in the importance of intellectual mastery, orientation toward work, and competitiveness which are related to achievement-oriented behaviors. It was included in the CBT testing to help establish the validity of other measures included in this study and to predict achievement as a cadet. External normative data on this scale is not available at this writing and the scoring key is not firmly established. However, other researchers have made their data available for comparisons.

P is a scale of "organizational commitment" developed by Porter, Steers, Mowday, and Boulian (1974); and modified for use at West Point. Detailed justification is focused in the proposal at reference note 2. It has been used in previous ODIR study of military career commitment.

INCRESC is a measure of factors which increase military commitment. The questions were selected from a study by Marron (1972). The higher the score, the more reasons the cadet reports as increasing his military career commitment.

There were three scales designed to measure beliefs of cadets about strategies for changing sex discrimination: MIE 1, MIE 2, and MIE 4. These scales were based on Gurin's (Gurin, et al. 1969) concept of multidimensional internal-external control. In 1975 before the admission of women to West Point, cadets favored individual action (internal control) rather than system blame or protest as the preferred method for ending discrimination (Priest 1976a). It was hypothesized that women cadets and new men cadets might favor more militant action strategies for ending discrimination. MIE 1 reflects a preference for individual achievement rather than collective action as the strategy for change. MIE 2 reflects the belief that discrimination can be modified. MIE 4 indicates blaming the individuals rather than the system for failures. These items were developed locally, so normative data from other institutions is not available.

EQUALITY is a 4-item scale intended to measure belief in the rigid application of an equal treatment policy. A content analysis of spontaneous cadet comments on the admission of women, made by upper class cadets before women were admitted, revealed a high degree of concern for strict equality (Priest & Houston 1976). Inexperienced leaders are likely to favor simple, objective policies, such as strict equality of treatment, because it is easy to monitor such policies. Actually, the law admitting women to West Point mandates a departure from a policy of strict equality of treatment. In addition, the Commandant of Cadets favored a policy of equality of stress, with stress being measured to some extent "in the eyes of the Stressee, not the Stressor." Thus it was expected that cadet attitudes would initially be strongly in favor of strict equality of treatment, but that they would change toward a belief in more flexible treatment policies over time.

EMOTE is a 3-item measure of emotionality. It was intended to measure specific emotions which result from being one of "the first coeducational class in the history of West Point." The three adjective pairs were: Excited (vs Not Excited), Scared (vs Not Scared), Very Happy (vs Not Very Happy). It was expected that women would be higher on this measure than men. No previous work has been done on emotional reactions to a specific event, although it is to be expected that this measure may correlate highly with other measures of situational anxiety.

E, positive attitudes toward physical skills activities, consists of items selected from the Physical Estimation and Attitude Scale used by Peterson and his colleagues in pilot studies of women undergoing rigorous physical training (Peterson, et al, 1976). Women undergoing such training did not improve in attraction to physical activity. Since we used only selected items, it is not possible to make valid comparisons between Peterson's data and cadet data. The items were included because it was expected that they would be a valid predictor of CBT attrition.

FEAR, a locally developed fear survey schedule, was intended to measure empirically the nature and level of psychological stress in CBT. Instead of asking about fears directly, cadets were asked to identify areas of the CBT experience that were of "concern." For example, items dealing with physical performance and evaluation by others were included.

There were several measures of the cadet's expectancies: XPROD, EFACT 1, EFACT 2, EFACT 3, EFACT 4. Based on prior MAOR Research (Marron 1972) and interviews a list of 52 experiences was developed. Cadets responded to the list twice: first to indicate the probability that they would or would not experience the item; second, to indicate their desire for the given item. XPROD is the most general summary measure: based on the theory that satisfaction with West Point is a product of both desire for an experience, and the expectation of receiving it, it is the sum of products of the 52 items. For each item, a cadet received a score of 1 only if he indicated he "definitely" or "probably" would experience the item and also that he had a "desire" to experience it; if a cadet failed to desire an item or expected not to receive it, his score was 0. Although this method of scoring XPROD has not yet been extensively tested, and must therefore be regarded as experimental in nature, it is consistent with a wide variety of expectancy theories of motivation. EFACT 1, EFACT 2, EFACT 3, and EFACT 4 are factor scores based on selected expectancy items from the New Cadet Questionnaire. The items selected for the factor scales were fairly univocal and had high loadings on 4 varimax rotated image factors.

Based on the Class Characteristics Index, which is given every year to new cadets, a number of summary measures of the student's high school preparation were computed. COURSES is the number of college preparatory courses taken in languages, math, and science. CLUBMEM reflects the number of clubs (high school sponsored or not) in which the cadet has been a member and/or an officer. Three measures of orientation to military education were derived; SCHOL, which measures the number of military ROTC Scholarships offers received; TRY, which reflects the number of other Federal Academies the cadet had attempted to enter; and GET, which reflects the number of other Federal Academy appointments actually obtained and (by inference) declined (because the cadet chose West Point above the others). PRIORED is a dichotomy reflecting whether or not the cadet had attended college prior to attendance at West Point.

Although the analysis eliminated cadets with a very high number of non-responses (blanks), the problem of selective non-response to particular items remained. For certain scales, it was assumed that non-response was equivalent to "no opinion" response, which was then assigned an intermediate item score value. For example, on a scale which used "(1) agree strongly" through "(5) disagree strongly" as the respective key, the "no opinion" response is 3, and missing values were treated as "3's". This procedure was followed for the following scales: WFO, E, ANDRM, ANDRF, AWS. On other scales, no correction was made.



The appendix contains a list of the formulae used to generate each scale score. These give the exact item numbers from each questionnaire (CCIN or NCQ), using SPSS procedures to define the cumulative scores.

## RESULTS AND DISCUSSION

**PHYSIOLOGICAL-ANTHROPOMETRIC DIFFERENCES:** Physiological differences between the sexes are important for West Point because they provide the only legal rationale for different treatment of the two genders. The word "physiological" is perhaps unfortunate, because it suggests a rather narrow focus on body chemistry. In this section the focus is on male-female differences which are clearly biologically based, rather than on the narrower concept of physiological differences. It focuses on anthropometric variables of height and weight, handedness and physical aptitude.

Peterson (1976) reported a survey of the literature comparing adult males and females in general. He found clear and marked differences between the sexes in anthropometric characteristics, body composition and cardio respiratory factors. The effects of menstruation on female performance was not clear from the literature but the majority of experts recommended no restrictions on female exercise during menstruation. Stauffer (1976) reported on differences in physical performance between male and female cadets in the Class of 1980 during Summer Training. The men had more upper body strength, power, and endurance; greater leg strength, power, and endurance; greater hand strength; and greater height and lean body weight. The women had greater skinfold measures, indicating more body fat. Stauffer's data were based on very careful laboratory measurements of a random sample of 30 men and 30 women. The height and weight data reported below are based on measurements at entrance made by the Office of Physical Education and is complete for all cadets (Houston 1976). Consequently, height and weight may not be as precise as the laboratory measure, but they are not subject to sampling fluctuation.

Table 2 shows how men and women in the Class of 1980 differed on physical ability, height, weight, and handedness. The differences are not only statistically significant but large in magnitude. Relatively few women, not more than 7%, excel the male thirty-third percentile standard. This means there is little overlap in height, weight, or physical aptitude measures of the two genders. It is interesting to note that at West Point the two genders differ more than they do in the population at large. In the national sample, 24.8% of the women were heavier than the male thirty-third percentile standard. Thus West Point men outweigh West Point women to a much greater extent than the average man outweighs the average woman. In a highly selective institution such as West Point, one would expect sex differences to be smaller than in the nation at large. West Point men are taller and heavier than the average 18 year old; West Point women are taller but not significantly heavier. This might reflect a relatively low proportion of body fat in West Point women. Stauffer (1976) shows that West Point women have 25-26% body fat by weight, but we have no comparative data from other samples. In any case, it is paradoxical that in both height and weight, sex differences at West Point are greater than in the national sample.

Table 2 also shows that more men are left-handed than women. Meyer (1960) noted that left-handed people have different cortical organization than right-handed people, especially with respect to language abilities. Further research may show that left-handed male cadets differ in verbal ability or reading skills from right-handed cadets. If so, left-handed male cadets may be a group requiring special treatment. The data in Table 2 shows that women cadets will be less susceptible to potential handedness-related problems.

FAMILY BACKGROUND: West Point does not select cadets on the basis of their parents' education, occupation, income, religion, or marital status. Indeed, it would be improper to do so. Nevertheless, there is considerable interest in the social representativeness of the Army, and information on these characteristics is one way to assess the representativeness of both male and female entrants to West Point. Before the civil rights movement, many institutions were officially "color blind", ostensibly operating on strictly meritocratic principles; nevertheless, institutional racism in selection was the unintended result. It is possible that in the case of women cadets, subtle forms of institutional sexism are operating in the selection process, resulting in unintended but unfortunate restrictions in selection of female cadets. The data in this section on family background may be of help to administrators and long-range planners who might be concerned about possible cases of institutional sexism. "Family Background" characteristics are often referred to as demographic characteristics since demographers also study these traits; in this report, it is felt that the former term is more informative and generally understood.

Marron (1972) reported on the socioeconomic background of West Point graduates. He found that sons of military careerists were disproportionately represented in West Point Classes of 1961-1965. Priest (1976c) reported on a number of family background characteristics in the Classes of 1970 to 1979 at entrance. Among male cadets, there have been increasing percentages who have non-military fathers, non-whites, and Roman Catholics over the ten year period.

Tables 3, 4, and 5 report on the civilian occupations of fathers and mothers of West Point cadets. Table 3 indicates that father's occupations were overwhelmingly white collar (72% for male cadets and 75% for female cadets in contrast to 34.4% for the nation as a whole). There are few noteworthy sex differences in father's occupation. For all occupations, 18% of the female cadets and 13% of the male cadets indicated their father had a "military career." Table 4 shows the civilian occupation of mothers who had an occupation. Many cadets reported that their mothers were homemakers (41% for males, 35% for females). When the mother did work, they were disproportionately white collar workers (89% for men, 95% for women cadets, vs 60% of women in the labor force). The working mothers of female cadets were in relatively lower status white collar positions than the working mothers of male cadets, with 10% fewer professionals, 12% more clerical positions. In families where both parents work, it appears that female cadets were more likely to have a father of higher occupational status than the mother. This finding may have implications for the ability of female cadets to adjust to a predominantly male environment such as West Point. Table 5 shows comparative data on father's occupation from Marron's (1972) study. In contrast to the Class of 1980, the earlier West Point classes had fewer fathers who were professional or managerial. Though some coding bias may be reflected in this comparison, it suggests that West Point is becoming less representative over time in terms of fathers' occupational status.

At the Naval Academy (Fitzgerald & Cochran 1976) there is an indication that fewer midshipmen come from white collar backgrounds. At the Air Force Academy also (Schloemer & Meyers 1976), a lower percentage of white collar occupation is reported. In part, these differences are due to methodological differences in the measures used. Nevertheless, the differences among academies may be real. If so, there are important differences among academies in the image they communicate to the public and the social representativeness of the officers they graduate.

Table 6 shows the religious affiliation of the Class of 1980. In agreement with results reported by Priest (1976c), there is a high percentage of women cadets who are Roman Catholics; more than among male cadets. In contrast to data for college freshmen, there



is a higher percent for Roman Catholic cadets at West Point, lower for Protestants, lower for Jewish and fewer "other". It is worth noting that male cadet religious affiliation shows a close correspondence with the data on church membership as reported by the religious bodies themselves. College freshmen are less likely to report an affiliation than church bodies. At the Naval Academy, only 30% of the midshipmen are reported as Roman Catholic (Fitzgerald & Cochran 1976). West Point may thus be more representative of religious affiliation than other academies.

Table 7 shows the region of birth of the Class of 1980. The region of birth may not represent the state in which the cadet grew up, especially if the father was a military careerist, but it does indicate the state of "origin" for many. There are no appreciable sex differences in the Class of 1980 in state of birth. Cadets from the Northeast are somewhat over represented in the class, whereas cadets from the South, West and North Central are under represented. At the Naval Academy, the Northeast is even more over represented, the South and North Central more under represented; the West is over represented at the Naval Academy (19%), in contrast to West Point (Cochran & Fitzgerald 1976). At the Air Force Academy, the West is very heavily over represented (26%), the Northeast, South and North Central regions under represented (Schloemer & Myers 1976). Each academy has its own regional advantage. But in all three academies, the South is under represented, in contrast to the over representation of the South in earlier military elites (Janowitz 1971).

Table 8 shows the parent's military service status of cadets in the Class of 1980. Almost all of the mothers were reported as having no military service. About one quarter of the fathers had no military service. Another twenty-five percent of the fathers were retired military (after 20 years or disabled) or now on active duty. The remainder served in the military in some capacity, but could not be classified as careerists. There were no noteworthy differences between male and female cadets in parent's military background.

There were no significant differences in parent's income, and mother's highest level of formal education. The women cadets reported a higher level of education for their father than the men did.

HIGH SCHOOL BACKGROUND: Some aspects of the student's high school background reflect his parent's socioeconomic status or the community in which he lives; for example, whether he attended a public high school or the number of high schools he attended. Other aspects of the student's high school background reflect his ability to do the academic or military work at West Point; for example, the number of college preparatory courses he took, his participation in sports or scouting, the number and type of leadership experiences in extracurricular activities. There is little comparative data on high school background for students attending other schools, so this section will focus on differences between the sexes.

Houston (1976) reported varsity sports participation separately for each sex. Men participated most in football, baseball, basketball, track, and wrestling. In contrast, women's participation was concentrated in basketball, track, and volleyball. These differences may reflect differences in programs available to men and women in high schools as well as differences in ability or interest. Only recently was legislation enacted which requires equal facilities for each sex, and the Class of 1980 would be too early to reveal its effects. There are no systematic data on availability of athletic facilities for each sex, or for students in different-sized high schools. With local school budgets being affected by financial stringency, athletic programs may not be equally available to all West Point applicants. The large difference between male and female cadets in physical aptitude has already been noted, but it cannot be determined whether a physical



aptitude deficit is the cause or the effect of differential sports participation by females.

There were no differences between men and women cadets in the type of high school they attended or the number of high schools attended. Women were more likely to have completed an honors course in some subject than men (77% vs 57%). This result is consistent with other data suggesting superior academic aptitudes of the women. Women and men were not different in the number of foreign language, math and science courses they took, but more women in this group had taken French (42% for women vs 28% for the men). Women reported belonging to more "high school clubs" - sponsored by the high school or not. They reported being president or vice president of the non-high school sponsored clubs as often as the men, but held other club officer positions more often. These data suggest that the women cadets were more socially active than the men, but had a lower chance of being elected to club presidency. Such non-school sponsored clubs may tend to perpetuate patterns of discrimination against women of their local community. A widely held norm for women in our culture is to join a large number of voluntary organizations often at the expense of depth of commitment. The results may indicate that women cadets accepted such a norm. If women cadets at West Point continue the pattern of their high school years, they may be in danger of "spreading themselves too thin." A similar reaction occurred at the Merchant Marine Academy when they integrated women cadets in 1975.

More of the women had attended college prior to coming to West Point in comparison to the men (31% vs 14%). Such prior college attendance may have an important bearing on the motivation of women to complete West Point.

Both sexes reported rejecting an equal number of academic scholarships to attend USMA, but the males rejected more athletic Scholarships. This data is consistent with data on male athletic participation discussed earlier. Neither sex reported receiving a large number of military scholarships (ROTC), each group receiving approximately the same number. The men tended to get more Navy ROTC Scholarships than women (11% vs 3%).

As one would expect, men reported trying to enter USMA for more years than the women cadets. The men also tried to get Naval Academy and Coast Guard Academy nominations more often. There was no sex difference in the number of other academy appointments received however. A large majority reported that West Point was their first choice. Among those who chose other schools there was a highly significant sex difference with more women choosing "a civilian liberal arts college" or "another college". Perhaps this difference simply reflects the fact that the women had in fact gone to another college prior to West Point more often than the men.

West Point made special efforts to inform women candidates about the nature of its program. The data reveals that 42% of the women cadets had participated in a "special one and a half day over-night tour conducted at West Point for admissible West Point candidates." In contrast, only 13% of the men cadets had a similar tour conducted by the Office of Admissions. There is no data on the number of candidates who visited West Point for other reasons - such as on athletic recruiting trips. Thus, men may have had more on-site experience than the above figure suggests. Women reported being briefed more than the men on the "mental and physical demands of CBT" (93% vs 85% for the men). For a further analysis of the effects of special admissible candidate briefing the reader is referred to a report by Bridges (1976).

COGNITIVE AND INTELLECTUAL PERFORMANCE: West Point selects cadets who are above average in academic ability as measured by standardized high school rank and aptitude test scores. Houston (1976, 77-001) reported the original data for the Class of 1980. Table 9 gives several estimates of the size and significance of the male-female difference in ability.

It shows that females are significantly superior in high school rank, in samples measured by the ACT tests and those measured by SAT tests. That is, 90-91% of the women cadets surpass the male 33rd percentile, while (by definition) only 66.6% of the males pass. The women were also superior in certain verbal skills, both on the SAT verbal test and the ACT English test. Table 9 also shows that the women were lower than men in mathematical skills, as measured by both tests, but not to a statistically significant degree. This pattern of gender differences in ability test scores is consistent with data for other colleges. For example, among freshmen students at highly selective public universities, men report better preparation in mathematical skills, women report better preparation in reading and composition (Astin, King, Richardson 1975, p. 54).

In an earlier review of sex differences on a variety of aptitude measures, it was noted that high school girls tend to score lower than high school boys on information tests about electricity, mechanics, sports, military subjects, and hunting (Priest 1975). There is no data on the knowledge that cadets had of these specific subjects at entrance, but given the emphasis on memorizing specific items of sports information, and military information in the training of new cadets, it is evident that training procedures may be biased against women cadets. Although plebes were undoubtedly given written tests of "fourth class knowledge" by the upper class cadet leaders, such data is not normally available to this office. If it were available, it would be possible to compare the two genders in learning of fourth class knowledge, thus evaluating the research hypothesis stated above.

The two genders do not differ on a number of self rated intellectual abilities (Priest 1976c). Women cadets rated themselves as highly as the men in academic ability, oratorical ability, public speaking ability, and intellectual self confidence and considerably higher than comparable college students. There is good evidence that equality in self-rated abilities among cadets reflects an equality among the candidates to West Point. The College Board gave a self descriptive questionnaire to 4860 male candidates and 230 female candidates prior to admission. Men and women candidates, with approximately equal frequency (+ 10%) rated themselves in the top 10% in the following cognitive abilities: creative writing, mathematics, science, spoken expression, and written expression. Thus, men and women cadets are equal on a number of non-test cognitive abilities, as well as tested abilities.

INTERESTS, VALUES, GOALS: There are only fragmentary data at present on the interest patterns of male and female cadets. The American College Testing Service administers a Class Profile Questionnaire to candidates, including an interest inventory. Although it is based on only 398 men and 13 women who eventually enrolled, the data are important because it was administered in a neutral setting before the students knew they would be going to USMA. There were no significant differences between the mean interests of the two sexes in "social service, business contact, business detail, technical, science, or creative arts." With a larger sample, gender differences in interest patterns may be discovered, but the initial results suggest that male and female cadets had basically similar interest patterns. We will have better data available when the analysis of Strong Vocational Interest Profiles is completed.

The American Council on Education routinely investigates the values of entering college freshmen. It asks students to evaluate the importance of certain long range objectives which include both vocational, personal, and social achievements. In 1972, it published norms on a group of 12 four year technological institutions which were predominantly male, but included some women. It was found (Priest, 1975) that women in such colleges had a markedly lower valuation of "be an authority in my field," "obtain recognition from peers,"



"raise a family," "be administratively responsible," "be well off financially," "keep up with political affairs," and "succeed in my own business." Because West Point appeals to many of the same people as these technical colleges, it was expected that women cadets would exhibit the same characteristics. Data from women in the Class of 1980 showed they were not as under motivated as the technical college women. Women in the Class of 1980 placed a very high value on "becoming an authority in my field", as high as a comparable group of male cadets (Priest 1976c). But like the technological college women, the women cadets were low in valuation of "raise a family", and "keeping up with politics". Both men and women cadets are equally high in wanting to attend West Point because of its "special education programs". Both groups expect to graduate from West Point and find a job in the field they were trained for (i.e. The Army). These data suggest a high degree of value and goal similarity of the two sexes. It should be noted that only a partial analysis of the ACE data has been completed, and more definitive conclusions await such an analysis.

ATTITUDES TOWARD WOMEN AND RELATED TOPICS: Most cadets preferred West Point as their first choice (83-81%) for schooling. Among the subset who took the ACT Class Profile before coming to West Point, however, an interesting difference emerged. Students were asked if the college they preferred to attend were coeducational, all male, all female, or if they had no preference. Only 34% of the men chose "coeducational", as opposed to 77% of the women. The difference is statistically significant even for the small sample. The data indicate that women preferred coeducation, whereas men did not. It may be that men were simply less well informed, thinking that West Point was not coeducational at the time they applied. When they entered West Point, the entire class was asked "if you had not chosen West Point, would you have preferred: A. A coeducational institution, B. A single sex institution, C. It makes no difference." There was no significant difference between the sexes in response to the question. Probably some men were opposed to attending a coeducational West Point prior to selection, but learned to accept it by the time they were tested early in Cadet Basic Training.

Table 10 shows the emotional responses of each group to being in the first coeducational class in West Point history. As could be predicted, women cadets report a higher likelihood of feeling emotional about being in this group. Psychologically, the women were under greater emotional stress than the men.

Table 11 shows how each group felt about equality of treatment. A majority of cadets favored flexible leadership and flexible treatment policies. A sizable number of men plebes, however, favored a rigid "no exception" equality of treatment. Unfortunately no attempt was made to measure the concept of effort (in contrast to equality of treatment).

Both men and women cadets tended to agree on the aims of physical training for women at West Point. They had the same perception of a woman's chances to "become executive of a company". But in regard to combat, opinions differed: male cadets felt that, considering the laws against women in combat, West Point should train women as non combat leaders; women tended to favor West Point's "traditional mission" and advocate training women as "combat leaders". Women tended to agree that "Congress should let women enter combat units" in contrast to the men, who tended to disagree. Women tended to agree more than men that "many women are more than willing to go into combat."

Table 12 portrays attitudes toward dating, engagement, and sexual relations. Both men and women have similar patterns of attitude, but differ in degree. Women cadets were more in favor of permitting dates between cadets of the same class than men are. Women cadets believe more strongly that being a soldier is compatible with "femininity". Women cadets disagree more strongly that men cadets should not be allowed to date women cadets. Women disagree more strongly that "a woman cadet" should not get engaged and they deny

that they would not like to marry "the type of person of the opposite sex who would be at USMA." Women cadets are more in favor of abortion than men. Both men and women tend to favor the same side of each issue, but the women's mean opinions are closer to the extreme end of the scale. Thus, both men and women favor the freedom to date, to get engaged, have sex, even have abortions, but the women more strongly than the men.

Attitudes toward marriage, birth control, and having children have extremely important implications for the career development of women cadets. Traditionally, the male officer expects to marry and have a wife who will pull up roots and go with him whenever he is reassigned to a new duty station. Women officers may have the same needs, but it may be difficult for them to achieve satisfaction within traditional sex role patterns. During the last 10 years, entering male cadets at West Point have stated that "raising a family" was a very important goal (Priest 1976c). Women in the Class of 1980 placed far less emphasis on this goal. In addition the women in the Class of 1980 expected to have fewer children than comparable groups of male cadets or civilian college students. In effect, the women are saying that they are prepared to sacrifice the traditional satisfactions of raising children for the sake of their military career. Table 13 shows the percent of cadets who prefer each combination of marriage, career, and job. A large number of women cadets, and most of the male cadets want all three - marriage, children, and full time job. But unlike the average 18-24 year old women who prefer marriage, children, and no full-time job, West Point women cadets more frequently prefer marriage, no children, and a full-time job. The average woman appears to place a higher priority on having children than on having a full-time job. In contrast, West Point women place a higher priority on having a full-time job. The data in Table 13 were gathered after two months of Cadet Basic Training and are generally consistent with the pre-CBT data.

SELF-CONCEPT: The self concept of West Point cadets tends to be positive in regard to academic and cognitive abilities, as noted above. It would seem to follow that both male and female cadets should have positive self-concepts in other areas as well, given their history of extracurricular participation and their demonstrated leadership in high school.

Among candidates to West Point who took part in the college board survey,<sup>7</sup> men and women rated themselves highly to about the same extent in "ability to get along with others," "acting ability," "leadership," "organizing for work," and "sales." The genders did not differ in self-rated ability in the candidate population.

At entrance, women in the Class of 1980 rated themselves high in "cheerfulness" (higher than a comparison group of male cadets) and high in "understanding of others." In comparison to male cadets, they were lower in "popularity," "popularity with the opposite sex", and in "sensitivity to criticism". The first two are traditionally feminine traits which tend to elicit high positive ratings in all college students (Priest 1976c). It should be noted that USMA women rated themselves high in popularity relative to civilian college students, even though they were not as high as male cadets in this trait. The women may in fact see themselves as less popular than the males because of their adoption of a non-traditional career pattern. This seems unlikely, since they are high in self-confidence relative to other college women who are most likely more traditional. Perhaps it is the men who are unrealistically high in self-esteem.

One common methodological problem in interpreting such self-concept measures is a lack of control for realism. Positive self-concepts are good if they are realistically based on consensually validated objective performance. But when cadets are asked to quantify the positive traits they have, a bias toward positive self-report is elicited. There are no established standards for "excessively high" levels of positive self-report.



The Personal Attributes Questionnaire (PAQ) is not as subject to such response bias. Table 14 shows how cadets rate themselves on certain PAQ items. The data show that West Point men rate themselves as higher in instrumental attributes than either men at the University of Texas or West Point women. The difference between the self-rating of the two genders is greater at the University of Texas than it is at West Point ( $t = 3.73$ ,  $df = 23$ ,  $p < .01$ ). In certain items, the sex difference is small relative to the Texas-USMA difference. For example, regardless of sex, West Point cadets rate themselves higher than Texas students in aggressiveness, roughness, and competitiveness but lower in helpfulness to others, and awareness of the feelings of others. Such institutional differences are consistent with the hypothesis of USMA's institutional distinctiveness stated in an earlier analysis (Priest 1976c). In other areas, the sex difference is larger than the institutional difference. For example, regardless of school, women tend to report being higher than men in emotionality, need of other's approval, crying, and the need for security. Prior to the admission of women to West Point, it was anticipated that male cadets might not know how to deal effectively with female cadet crying behavior. Male cadets tended to attribute bad intentions to women who cry (Priest 1976d, p. 6). Nevertheless, in overt behavior, the cadets in charge of training during the summer of 1976 reported no special crying problem with the women cadets. The Air Force academy reported having to train women cadets not to cry in stressful situations. It is clear that self-reports of tendencies to cry in women do not necessarily indicate a lack of ability for emotional self-control in overt behavior. The sex differences in self-concept reported here have implications for the effectiveness of cadets in performance of military duties. A study of the relation between the PAQ items and military effectiveness is required to clarify the implications of the sex differences.

PERSONALITY DIFFERENCES: The Maudsley Personality Inventory, which taps introversion and neuroticism, was given to all 10 cadets during new cadet training as a part of a project for predicting cadet adjustment. Women cadets admitted to slightly more neurotic symptoms than men ( $\bar{x}$ 's = 9.243 for women vs 8.760 for men), but the difference was not statistically significant. Men reported more signs of introversion ( $\bar{x} = 9.387$  out of 24 raw score points) than women ( $\bar{x} = 8.915$ ), but the difference was not statistically significant. Both groups are relatively non-neurotic, and relatively extroverted.

MULTIVARIATE STUDY OF DIFFERENCES: Table 15 shows whether or not each variable, taken by itself, reveals a significant sex difference. Of the 20 variables, 10 show a significant sex difference. Table 15 also shows the magnitude of the difference; for example only 54% of the women cadets are higher than the male 33rd percentile on AGCOG. The attitude-to-women variables show especially large differences. On the AWS, 99% of the women surpass the male standard on this variable. The women are, obviously, more pro-feminist and less traditional than a great majority of men. On EMOTE, 97% of the women surpass the male standard. The women are more excited-happy-scared than the men at being part of West Point's first coeducational class; or perhaps they are simply more willing to express their emotionality. On EQUALITY, only 34% of the women surpass the male standard. Thus, few women are as rigid in demanding "no exceptions" to an equal treatment policy as males. On the other variables, the differences between men and women are less extreme.

Looking at each variable separately is potentially misleading. It could be that each variable is so closely correlated with the others that there is really only one generalized sex difference. In a multiple regression model, this potential source of misinterpretation is ruled out, because only the unique contribution of the variable is tested for significance.



In this section the focus shifts to a multi-variable analysis. We use all of the motivational and attitudinal variables as predictors of the individual's gender, using multiple regression. The more "variance" in gender that can be attributed to motivational factors, the wider is the difference between the two sexes, and the less the overlap.

Table 16 shows the multiple regression equation using 29 variables as predictors of sex. The multiple correlation is .56 ( $p < .001$ ), which means that the motivational and attitudinal variables account for over 31% of the variance of the individual's gender classification. In practical terms, this means that a linear combination of the scores can be made such that males and females have fairly non-overlapping score distributions. For each variable, the beta weight reflects the contribution each standardized variable makes to the overall prediction. Each beta weight reflects how much variance is explained by the variable when all of the other variables in the equation have been held constant. As Table 16 shows, there are a number of variables which contribute, to a highly significant degree ( $p < .001$ ), to explaining the variance in the criterion variable. There are seven: AGCOG, EFACT 3, EFACT 4, TRY, CLUBMEM, EMOTE, and AWS. When these 7 variables alone are used as predictors they explain 28.5% of the variance. Further discussion is confined to these variables.

The largest beta weight is associated with AWS. This means that the largest difference between men and women cadets is their attitude toward the roles of women in society. The second largest beta weight is associated with EMOTE. This means that, men and women cadets differed in their emotional reaction to being in the first coeducational West Point class in history, even after holding constant their AWS scores. Women were more emotional, i.e., happy-sad-scared than men were. Incidentally, since several measures of anxiety were included in the model (TESTANX, FEAR), this difference between the sexes cannot be attributed to sex differences in anxiety: it is specific to being the first women cadets. It should be noted that EQUALITY does not have a statistically significant beta weight. The large sex differences noted above on this variable are explained by its association with AWS and EMOTE. Men and women have different beliefs about a rigid no-exceptions approach to equality but this difference is explained by their attitudes to women's roles in general.

The third largest beta weight is associated with CLUBMEM. Men and women differed in the number of clubs they belonged to in high school. Women belonged to more clubs, and were officers of clubs not sponsored by the school more often than men. Thus, women were more active in non-athletic extracurricular activities than men. In the preceding analysis it was shown that men lettered in more sports than women. Unfortunately, sports participation was not included in the model of Table 16.

The fourth largest beta weight is associated with EFACT 3. Men and women differed in their expectancy of autonomy. For example, detailed significance tests show that women cadets expected, more than men, to be "unable to plan your own day," less likely to experience "having a lot of free time", and being less likely to be "allowed to make mistakes". Perhaps the women were being more realistic than the men or perhaps they expected to be discriminated against in the area of autonomy. But the fact that women expected less autonomy cannot be attributed to their attitudes toward women's roles, their emotionality at being "one of the first", or any other variable in the model.

The fifth largest beta weight is associated with AGCOG. Men were more confident they would remain at the academy until graduation than women. It is interesting that men and women were not significantly different on several measures of commitment to a military career: MCCOG, INCRES. That is, the women were about as interested in a military career as the men, but were less committed to West Point as the best method of preparing for a

military career. This difference has important implications. It suggests that West Point was successful in recruiting female cadets with high military career motivation, but women were taking a wait-and-see attitude to West Point as an institution. If women cadets voluntarily resign from West Point at a greater rate than male cadets, it cannot be attributed to a lack of career motivation. However, when women and men are equated statistically on AWS, EMOTE, and other measures, the women are less committed to West Point graduation. The women in effect were saying "I want a military career, as much as the men, but I'm not sure I want four years at West Point."

The sixth largest beta weight is associated with TRY. Men were more likely to try to get a nomination to the Naval Academy, or the Coast Guard Academy. Since trying to get a nomination is independent of military career motivation, the fact that men try harder to get a nomination must be attributed to other factors. Only recently has it been possible for women to apply for admission to West Point. It may be that women simply had less time to apply for more than one academy. Although men tried harder to gain a nomination, there is evidence that they were not very much more successful: on variable GET (Number of other academy appointments received), the difference between the sexes was not significant at the .001 level.

The seventh largest beta weight is associated with EFACT 4. Women are higher in expecting participation than men: items like "chance to go on trips", "have a voice in student affairs", "have a voice in administrative decisions", "chance to participate in the leadership of campus groups", "participating in extracurricular activities of your choice". These items are highly correlated with the expectation of "chance to meet members of the opposite sex" and "being able to date each week". Detailed significance tests show that the women cadets expect to have far better chances of "meeting members of the opposite sex" ( $p < .001$ ). Lest this be misinterpreted, women also rate themselves lower on the desire to meet members of the opposite sex ( $p < .01$ ). Women cadets knew they would be a minority at West Point. Perhaps for that reason, they expected to have a relatively important voice in leadership and decision making.

On EFACT 1 and EFACT 2, the beta weights were not significant. This means that men and women cadets had highly similar expectations in the area of military training at West Point and in the area of personal autonomy.

There was no significant beta weight associated with ROTTERIE, ANDRM, Status, or any of the Mie subscales. This indicates that men and women cadets were approximately equal in internal-external control. Both male and female cadets tend to be internally controlled. Both tend to rate themselves equally high on instrumental and expressive attributes on parents' educational status, and on the several dimensions of strategies for achieving integration (The Mie Scales).

A number of important variables were left out of the model, and so it must be regarded as tentative; for example, physical aptitude measures, height, weight, and sports participation. Men had more positive attitudes to physical skills and to exercise ( $p < .05$ ) than women; yet when AWS scores are partialled out, the significant difference disappears. The inclusion of PAE as a control variable is an important step. It is clear that women entered with relatively positive attitudes to exercise in spite of having very much lower upper body strength and physical aptitude.



#### GENERAL CONCLUSIONS AND REFLECTIONS

It would be premature to suggest policy changes based on known differences that have been found to date. Longitudinal data reflecting changes over time as a function of being immersed in the West Point cadet environment will be important for determining the necessity for changes at West Point. Furthermore, relationships between the measures employed and discussed in this report and performance indicators must be examined in order to properly assess the utility of such research variables and hypotheses.

This report shows that women cadets tend to be far below men in height, weight, and physical aptitude. These inequalities are specifically allowed by the law which permitted women to enter the academies. Almost all the women, and a majority of men cadets, accept an approximately-equal-with-exceptions policy. But a large minority of men do not accept the idea; they want equal treatment with no exceptions.

Women cadets tend to have achieved greater rank in high school academic subjects than men cadets. Without a "job analysis" which justified a preference for certain traits in West Point graduates, there is no logical basis for preferring physical aptitude over mental aptitude in a candidate.

This report focused on the family backgrounds of cadets. Both sexes reported similar occupational distributions for their fathers. In cases where the mother worked, the women cadets reported their mothers were in relatively lower-status positions than mothers of male cadets. More of the West Point women cadets were Roman Catholics than men. There were no sex differences in the state of birth, parents' military service status, parents' income, or mother's education. Thus, there appears to be little evidence for overt forms of institutional sexism in the selection process.

There were differences in high school background. Men participated in more sports than women, and in different types of sports. The men had more athletic scholarship opportunities. Women belonged to more high school clubs. They attended college prior to West Point in greater proportion. The men tried to enter other service academies more than the women. Many of these differences reflect different opportunities which are offered to males and females in high school. To what extent should West Point attempt to remedy the unfortunate results of prior sex discrimination by society? Some remedial effort is obviously called for in traits which are demonstrably relevant to its training mission. If athletic competition is necessary for developing officer leaders, then West Point should take action to reduce the athletic participation gap during their four year stay. West Point's extraordinary efforts to inform women candidates about the nature of West Point should be seen in this context: a temporary expedient, performed to remedy past inequities .

In verbal ability women were better than the men cadets, but in most other abilities, such as mathematical ability, the two groups were approximately equal. They were equal in self-rated intellectual abilities, such as originality, public speaking ability, and intellectual self confidence. Such equality suggests that the highly selective USMA admission and recruiting policy was successful in establishing the intellectual equality implied by the law.

In the society at large, young men and women are socialized to have different goals and values. Unlike technological college women, West Point women, like West Point men, are high in the desire to become an authority in their field. For those tested on the ACT interest inventory both sexes have the same pattern of 6 general interest scales. In commitment to a military career, cadets of both sexes are equal. Both sexes give similar reasons as important factors in wanting to come to West Point. Both sexes tend to have equal expectancy for experiencing certain items of military training at West Point and

for lack of autonomy. Both are equal on belief in internal, as opposed to external, control. Both tend to have equally positive attitudes toward exercise.

The largest differences between men and women are associated with attitudes to sex roles, marriage, childbearing, and the prospect of being in a coeducational environment. Men tend to be traditional in their ideas about the proper role of each sex in society. They consider raising a family important, and expect to have a fairly large family. The women are far more liberal in attitudes to the role of women, as one might expect. They indicate more emotionality at being part of West Point. They do not consider raising a family as important as the men do and anticipate a smaller number of children. Demographers note a tendency for young women to postpone marriage and childbearing in recent times, but West Point women cadets are exceptional in their degree of postponement. Should West Point be concerned about the highly traditional sex role attitudes of male cadets? Perhaps it should be if it can be shown that traditional sex-role attitudes are associated with overt discrimination against women. At present, there is little evidence that men cadets who are traditional in sex-role attitudes act prejudicially toward women cadets, but it is a possibility which should be carefully monitored. Such attitudes are often the result of years of thinking and observation by the individual concerned, and may not be easy to change. The percentage of male cadets in the upper classes who express extreme anti-female prejudice was about 12% before the admission of women and dropped to about 6% by Reorganization Week 1976.<sup>11</sup> These results suggest that extreme anti-female prejudice can be reduced. Other evidence shows that this change is not accompanied by change in a large number of traditional sex-role attitudes.



Table 1

## Summary of Class of 1980 Attitudes Before Cadet Basic Training

VARIABLE	MEAN	STANDARD DEVIATION	POSSIBLE		HIGH SCORE INTERPRETATION
			MAX	MIN	
MCCOG	58.1784	15.5726	100	00	High Military Career Commitment
AGCOG	73.0970	17.5268	100	00	High Academy Graduation Commitment
SEX	1.0943	0.2923	2	1	2 = F, 1 = M
MIE 1	1.4159	0.7305	2	0	Prefers Individual Action, Not Group Action
MIE 2	0.9445	0.8085	2	0	Believes Sex Discrimination is Here to Stay
COURSES	6.5425	1.3301	14	0	Number of College Prep Courses Taken in High School
ROTTERIE	7.6839	4.0341	22	0	Person is not in control - Environment determines fate
INCRESC	5.4982	1.8903	11	0	Number of Factors Which Increase Commitment to Military Career
EQUALITY	1.2190	1.3606	4	0	Belief in Rigid Equality of Treatment, No Exceptions
MIE 4	1.8808	0.9975	3	0	Blames Individual, Not System, for Failure
AWS <sup>a</sup>	43.7486	10.7812	75	0	Non-Traditional Concept of Roles of Women in Society
CLUBMEM	9.7699	3.4375	36	4	Number of Club & Organization Memberships in High School + 4
DAY	6.0998	2.0058	8	4	8 = July 8 4 = July 9 Testing
E <sup>b</sup>	64.4104	9.1433	83	11	High Liking & Competence in Physical Skills
FEAR <sup>b</sup>	49.7508	9.8871	70.07	25.51	Performance Anxiety in Cadet Situations
ANDRW <sup>ab</sup>	49.6749	9.9725	75.33	-7.83	Perceives Self as High in Instrumental Attributes
ANDRF <sup>ab</sup>	49.8064	10.0291	93.59	-11.97	Perceives Self as High in Expressive Attributes
TSBI <sup>b</sup>	49.6849	10.1218	78.61	-10.36	Self-Confidence - "Texas Social Behavior Inventory"
WFO <sup>ab</sup>	49.9791	10.0943	85.80	-15.93	Persistent & Believes in Hard Work and Individual Achievement
TESTANX	5.7218	2.8888	16	0	High Test Anxiety
P <sup>b</sup>	47.8735	9.7125	64.41	-4.89	Porter Org Commitment : High Commitment
SCHOL	0.3078	0.6899	4	0	Number of ROTC Scholarships Offered
TRY	0.7569	1.0046	4	0	Number of Other Academies Tried For
GET	0.1377	0.4496	4	0	Number of Other Academy Appointments Obtained
MILBACK	0.9686	0.1745	1	0	Father Not ever an Officer and Warrant Officer (Both)
PRIORED	1.1553	0.3623	2	1	Some Prior College vs None
EMOTE	1.3105	1.0622	3	0	Number of Emotions (Scared, Excited, Happy) at being COED
XPROD	31.5139	6.8439	52	0	Expects and Desires a Large Number of USMA Environmental Items

<sup>a</sup> Missing values filled in with scale midpoint<sup>b</sup> Rescaled on 10/16/76 on Basis of Preliminary Data Analysis

NOTE: Only cases with no missing values on 6-tail items on the CCIN and the NCQ (3 each) were selected. Thus, records where cadets failed to complete the Questionnaires were eliminated.



Table 2

Anthropometric Differences Between Men and Women			
Variable	Men	Women	Percent women who exceed male standard
Height, inches <sup>a</sup>	70.2	65.4*	5.2
Weight, pounds <sup>a</sup>	159.9	130.4*	6.6
PAE, standard score units <sup>a</sup>	555.3	290.2*	0.0
Percent left-handed <sup>b</sup>	11.8	3.5*	-
National sample:			
Weight <sup>c</sup>	152.0	125.5*	24.8
Height <sup>c</sup>	69.0	64.0*	8.6

a Source: Houston, 1976

b Source: Class Characteristic Survey

c Source: A sample of 105 white males age 18, and 100 white females, measured by the U.S. Health Examination Survey 1966-1970

\* Statistically significant difference,  $p < .05$

Table 3

OCCUPATIONAL DISTRIBUTION  
(Men)

	National Data <sup>a</sup> Civilian Occupations of U.S. Men (1970 Census)	Civilian Occupations <sup>b</sup> Fathers of Cl of 80 Male Cadets	Civilian Occupations <sup>b</sup> Fathers of Cl of 80 Female Cadets
Professional	14.0%	36.3%	42.9%
Social	(4.8%)	(17.1%)	(17.9%)
Technical	(6.2%)	(17.6%)	(23.8%)
Artistic	(1.2%)	(1.6%)	(1.2%)
Farmers & Farm Managers	2.7%	2.5%	2.4%
Managers & Administrators	10.9%	27.5%	21.4%
Sales Workers	6.8%	6.0%	8.3%
Clerical	7.6%	0.7%	1.2%
Craftsmen	21.3%	15.6%	11.9%
Operatives (incl transport)	18.9%	4.4%	2.4%
Laborers (except farm)	7.0%	2.0%	2.4%
Farm Laborers	1.7%	0.4%	0
Service Workers	8.1%	4.6%	7.1%
Total	100%	100%	100%
N	49,455,000	1,000	84

<sup>a</sup> Source: Table 571, Statistical Abstract of the U.S., 1974.<sup>b</sup> Percent of those who indicated their father had a specific civilian occupation (percents add to 100). In addition, 13.2% of Male Cadets and 17.9% of Female Cadets had fathers who were military careerists. Also, 9.8% of Male Cadets and 10.3% of Female Cadets indicated fathers had "other" occupations or were unemployed.



Table 4

OCCUPATIONAL DISTRIBUTION  
(Women)

	National Data <sup>a</sup>		Civilian Occupations <sup>b</sup>	
	Civilian Occupations of U.S. Women (1970 Census)	Civilian Occupations Mothers of Cl of 80 Male Cadets	Civilian Occupations <sup>b</sup> Mothers of Cl of 80 Female Cadets	
Professional	15.3%	48.9%	39.7%	
Social	(10.8%)	(43.1%)	(34.9%)	
Technical	(1.9%)	(4.8%)	(4.8%)	
Artistic	(0.8%)	(1.0%)	0	
Farmers & Farm Managers	0.2%	0.2%	0	
Managers & Administrators	3.5%	8.3%	11.1%	
Sales Workers	7.4%	5.4%	6.3%	
Clerical	34.5%	26.3%	38.1%	
Craftsmen	0	1.1%	0	
Operatives (incl transport)	15.0%	4.3%	3.2%	
Laborers (except farm)	1.0%	1.4%	0	
Farm Laborers & Farm Foremen	0.6%	0	0	
Service Workers (incl priv household)	20.4%	4.1%	1.6%	
Total	100%	100%	100%	
N	30,347,000	627	63	

<sup>a</sup>Source: Table 571, Statistical Abstract of the U.S., 1974.<sup>b</sup>Percent of those who indicated their mother had a specific civilian occupation (percents add to 100). In addition, 52.1% of Male Cadets and 47.1% of Female Cadets indicated their mothers had "other" occupations, were homemakers or were unemployed.

Table 5

FATHERS' OCCUPATIONS OF WEST POINT MALE CADETS<sup>a</sup>

	<u>Entrants</u>	<u>Graduates</u>	<u>Active Officers</u>
Professional	22.7%	22.8%	23.1%
Social	(9.4%)	(9.1%)	(9.1%)
Technical	(12.3%)	(12.9%)	(13.2%)
Artistic	(0.9%)	(0.8%)	(0.9%)
Farmers	3.8%	3.4%	4.2%
Managers	25.3%	26.0%	22.7%
Clerical	5.1%	5.0%	4.9%
Sales	14.8%	13.0%	14.4%
Craftsmen	15.0%	15.8%	15.6%
Operatives	4.5%	4.7%	4.8%
Service Workers	4.9%	5.1%	5.2%
Farm Laborers	0.1%	0.2%	0.3%
Other Laborers <sup>b</sup>	3.4%	4.0%	4.9%
Military	21.3%	23.0%	28.3%
Number in Civilian Jobs	2955	2006	925
Total Sample	3755	2605	1290

<sup>a</sup> Men who were in the Classes of 1961 to 1965 (see Marron, 1972).

<sup>b</sup> Note: We excluded Military & Other, since they are not comparable to U.S. Census categories.



Table 6

## RELIGION

	<u>College*</u> <u>Freshmen</u>	<u>Census** of</u> <u>Membership</u>	USMA CL of 1980	
			<u>Male</u>	<u>Female</u>
Protestant	42%	54.5%	53.4%	47.0%
Roman Catholic	36%	36.8%	38.8%	44.4%
Jewish	4%	4.6%	1.2%	1.7%
Other and none	17%	3.9%	3.9%	6.8%
	<hr/>	<hr/>	<hr/>	<hr/>
	99%	99.8%	100%	99.9%

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\*Source: Gallup Opinion Index, May 1976, 130, P1-45.

\*\*Census 1974 Statistical Abstract, p. 47 (1972 data).

Table 7  
REGIONS OF THE UNITED STATES  
State of Birth

<u>Region</u>	1960	USMA Class of 1980	
	Census %	Male %	Female %
Northeast			
New England	5.9%	6.8%	6.4%
Mid Atlantic	19.1%	21.7%	21.3%
North Central			
East North Central	20.2%	18.2%	18.5%
West North Central	8.6%	9.5%	10.2%
South			
South Atlantic	14.5%	14.0%	14.8%
East South Central	6.7%	7.0%	5.6%
West South Central	9.5%	8.8%	8.3%
West			
Mountain	3.8%	4.4%	3.7%
Pacific	11.8%	9.6%	11.1%

Source: Table 9, pp. 1-16, 1960 Census of Population, Volume 1, Characteristics of Population.

<u>Region</u>	1960 Census* Under Age 5		USMA CL of 1980	
	Male %	Female %	Male %	Female %
Northeast	22.9%	22.9%	28.5%	27.7%
North Central	29.6%	29.5%	27.7%	28.7%
South	31.5%	31.6%	29.8%	28.7%
West	16.0%	15.9%	14.0%	14.8%

\*Source: 1960 Census of Population, pp. 1-159.



Table 8

## PARENTS' MILITARY SERVICE

	PERCENT			
	Father		Mother	
	M	F	M	F
0 No service or don't know.	26.6	27.4	98.2	98.3
1. Physical disability retirement.	2.3	2.6	0.1	0.0
2. Non-reserve status - served 2 or more years on active duty.	6.9	7.7	0.4	0.0
3. Served 20 years or more, retired.	13.9	11.1	0.0	0.0
4. One tour.	36.8	35.0	1.2	1.7
5. Now in active service.	9.2	12.8	0	0
6. Inactive reserve, but 2 + tours.	1.8	2.6	0	0
7. Died in combat.	0.1	0.0	0	0
8. Now in reserves.	2.2	0.9	0.1	0.0
9. Died in service, not in combat.	0.2	0.0	0	0

Source 11/8/76 output DSR 211H

Table 9

Estimated Percentage of Female Cadets  
Who Exceed Male P33 in Ability Tests

Students Evaluated Using SAT Tests <sup>a</sup>	Female-Male $t$	Percent
SAT-V	2.35*	75.6
SAT-M	- 1.87	60.7
HSR	6.49*	89.6
CEER <sup>c</sup>	3.81*	84.6
Students Evaluated Using ACT Tests <sup>b</sup>		
ACT-EN	2.16*	77.6
ACT-MA	- 1.89	57.2
ACT-NA	- 0.27	64.5
HSR	4.31*	91.0
ACEER <sup>c</sup>	1.63	79.8

<sup>c</sup>Composite of preceding variables: See Houston, 77-001.

\*  $p < .05$

<sup>a</sup> $N=1019$  men and 81 women.

<sup>b</sup> $N=347$  men and 38 women.



Table 10

Emote: How cadets felt about being one of the group  
of "The First Coeducational Class in the History of  
West Point."

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<u>Feeling</u>	Percent who felt the emotion	
	<u>M</u>	<u>F</u>
Excited (vs not excited)	46%	87%
Scared (vs not scared)	22%	73%
Very happy (vs not very happy)	54%	75%

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Table 11

Equality: Belief in Strict Equality  
With No Exceptions

Strict Equality Position	Percent endorsing "No exceptions"	
	M	F
A good leader should treat everyone in the unit exactly the same with no exceptions ( <u>vs</u> approximately the same)	32%	29%
Men and women cadets should be treated exactly the same ( <u>vs</u> some allowance for physiological differences)	28%	3%
West Point should treat all its cadets equally without regard to race, creed, or sex with no exceptions whatsoever ( <u>vs</u> some exceptions for scientifically proven differences).	38%	7%
Physical performance standards for admission to West Point should be the same for both sexes ( <u>vs</u> some allowance for physiological differences)	30%	3%

Table 12

Mean Response to Items Regarding Dating,  
Engagement, or Sex

Item Content	Men	Women	<u>t</u>
199. Favor or oppose Supreme Court ruling on abortion. <sup>a</sup>	1.97	1.69	3.18**
200. Dates between male & female cadets of the same class should be. <sup>b</sup>	2.65	2.90	- 7.70**
209. A woman can be a good soldier and still act feminine off duty. <sup>c</sup>	1.93	1.24	10.97***
215. A woman cadet at the Academy should not get engaged. <sup>c</sup>	3.18	3.73	- 4.02**
216. I would not be interested in marrying the type of person of the opposite sex who would be at USMA. <sup>c</sup>	3.05	4.14	- 11.49**
217. Male cadets should not try to date female cadets. <sup>c</sup>	3.57	4.19	- 5.51***
218. Male and female cadets should avoid sexual liasons with each other.	2.73	2.70	0.26

<sup>a</sup> 1=favor, 3=oppose abortion.

\*\*\* p < 001

<sup>b</sup> 1=Strictly forbidden 3=Permitted

\*\* p < 01

<sup>c</sup> 1=Agree strongly 5=Disagree thoroughly

\* p < 05



TABLE 13  
LIFE STYLE WHICH IS MOST  
PERSONALLY SATISFYING TO EACH GROUP

LIFE STYLE	M	PERCENT <sup>A</sup>	
		CADETS	GALLUP POLL WOMEN 18-24
		F	
1. MARRIED, CHILDREN, FULLTIME JOB	74	46	45
2. MARRIED, NO CHILDREN, FULLTIME JOB	10	25	8
3. MARRIED, CHILDREN, NO FULLTIME JOB	3	11	31
4. MARRIED, NO CHILDREN, NO FULLTIME JOB	1	2	1
5. SINGLE, JOB	10	14	15

<sup>A</sup>SOURCE: 11/09/76 ANALYSIS: REORGANIZATION WEEK SURVEY 1976

Table 14

Self-Concept Scores<sup>a</sup> On the Twenty-Four Traits of the Personal Attributes Questionnaire

QUES #	Description Of Instrumental End of Scale (High)	Texas		Mean West Point		Mean West Point	
		Male	Female	Male	Female	Male	Female
241	Aggressive	2.12	2.12	2.69	2.61	2.61	2.61
242	Independent	3.02	2.93	2.96	3.11	3.11	3.11
243	Not at all emotional	1.69	1.06	1.76	1.45	1.45	1.45
244	Dominant	2.52	2.36	2.45	2.39	2.39	2.39
245	Not at all excitable in a major crisis	1.94	1.55	2.13	1.99	1.99	1.99
246	Very Active	2.66	2.79	2.86	2.90	2.90	2.90
247	Not at all able to devote self completely to others	1.68	1.48	1.39	1.50	1.50	1.50
248	Very rough	1.49	1.15	1.85	1.64	1.64	1.64
249	Not at all helpful to others	1.03	0.91	2.02	2.06	2.06	2.06
250	Very competitive	3.02	2.68	3.40	3.22	3.22	3.22
251	Very worldly	2.17	1.97	2.01	2.15	2.15	2.15
252	Not at all kind	0.95	0.80	1.05	1.11	1.11	1.11
253	Indifferent to others approval	1.67	1.37	1.59	1.29	1.29	1.29
254	Feelings not easily hurt	1.65	1.18	2.14	1.63	1.63	1.63
255	Not at all aware of feelings of others	0.85	0.57	1.07	1.01	1.01	1.01
256	Can make decisions easily	2.51	2.20	2.65	2.48	2.48	2.48
257	Never gives up easily	2.97	2.84	3.19	3.02	3.02	3.02
258	Never cries	2.96	1.66	2.79	1.75	1.75	1.75
259	Very self-confident	2.63	2.49	2.78	2.40	2.40	2.40
260	Feels very superior	2.30	2.12	2.44	2.10	2.10	2.10
261	Not at all understanding of others	0.99	0.70	1.06	1.05	1.05	1.05
262	Very cold in relations to others	1.15	0.73	1.16	1.04	1.04	1.04
263	Very little need for security	1.52	1.01	1.52	1.39	1.39	1.39
264	Stands up well under pressure	3.08	2.83	2.98	2.75	2.75	2.75
	N	248	242	1277	115	115	115

<sup>a</sup>Source: Spence, Helmreich, Stapp (1974)

Table 15

Estimated Percentage of Women Cadets Who Exceed  
the Standard for Each Variable

	Significant	Females vs Male <u>Norm</u>
MCCOG		59
AGCOG	*	54
MIE 1		64
MIE 2	*	58
COURSES		66
ROTTERIE		69
Incresc		64
EQUALITY	*	.34
MIE 4	*	56
AWS	*	99
CLUBMEM	*	79
E	*	57
FEAR		65
ANDRM		61
ANDRF	*	81
TSBI		59
WFO		66
TESTANX	*	72
P		69
EMOTE	*	97

\* $p < .05$



Table 16  
Multiple Regression Weights for Predicting Sex of Cadets

VARIABLE	LABEL	SIMPLE R	BETA	F	*
MCCOG	Military Career Commitment Gradient	0.06	0.00	0.06	*
AGCOG	Academy Graduation Commitment Gradient	0.10	0.13	13.25	***
INCRSC	Increased Commitment to Military Career - No. Items	0.03	0.05	3.12	***
P	Porter's Organizational Commitment Scale	0.01	0.09	7.08	**
EFACT 1	Expectancy of Military Experience	0.01	0.00	0.00	
EFACT 2	Expectancy of Self Development	0.02	0.02	0.46	
EFACT 3	Expectancy of Autonomy	0.14	0.14	23.39	***
EFACT 4	Expectancy of Participation in Decisions	0.10	0.11	12.48	***
ROTTERIE	Rotter's IE Score	0.01	0.03	0.71	
E	Attitudes to Exercise Rescaled	0.07	0.01	0.21	
ANDRM	Instrumental-Masculine Traits	0.05	0.01	0.10	
ANDRF	Expressive-Feminine Traits	0.13	0.06	5.27	*
TSBI	Spence Texas Social Behavior Inventory	0.06	0.09	4.84	*
WFO	Spence Work and Family Orientation	0.00	0.05	2.02	
TESTANX	Test Anxiety Scale	0.06	0.06	3.93	
COURSES	Number of College Prep Courses Taken	0.02	0.01	0.30	
SCHOL	Number of ROTC Scholarships Received	0.05	0.04	2.46	
GET	Number of Other Academy Appointments	0.02	0.07	6.44	*
STATUS	Parents Education-Income Index	0.03	0.00	0.04	
TRY	Number of Other Academy Nominations - Try	0.12	0.11	17.94	***
FEAR	Prince-Rhone USMA Fear Situations Survey	0.01	0.04	2.30	
CLUBMEM	Number of Clubs - Members and Officers	0.21	0.20	32.93	***
DAY	9 July vs 8 July Testing	0.00	0.02	0.42	
MIE 1	Gurin Mult IE Individual - Collective Action	0.02	0.02	0.39	
MIE 2	Gurin Mult IE Discrimination Modifiable	0.07	0.03	0.83	
MIE 4	Individual vs System Blame	0.07	0.03	1.60	
EMOTE	Number of Emotions Due to Coeducation	0.30	0.21	54.42	***
EQUALITY	Belief in Rigid Equality of Treatment, No Exceptions	0.19	0.04	1.93	
AWS	Spence's AWS	0.41	0.33	123.57	***

\*  $p < .05$

\*\*  $p < .001$

\*\*\*  $p < .01$

#### REFERENCE NOTES

1. Prince, H. & Rhone, T. A research proposal to the United States Military Academy. Appendix 1 of Project Athena plan. No date.
2. Vitters, A. A research proposal to the United States Military Academy. Appendix 2 of Project Athena plan. No date.
3. Briefing for the Superintendent, Monday, April 5, 1976.
4. Mr. John Houston calculated the summary data from the 62 - title USMA Occupation List.
5. In interpreting this difference, it should be noted that the Class of 1980 coded its own father's occupation, whereas in Marron's Study, the researcher coded father's occupation after reading the cadets personnel file.
6. See the ACT Class Profile Report: Enrolled 1976-1977 Freshmen United States Military Academy, West Point, N.Y. No date.
7. See the file for Project 230: ATP Round 1 Report, Class of 1980 Candidates, Office of the Director of Institutional Research.
8. Commandants Briefing, 27 August 1976, Cadet Malcom source.
9. Captain Judy Galloway oral report on Women at the Air Force Academy 1976 Regional Inter University Seminar, Maxwell AFB, Alabama, October 23, 1976.
10. Priest, R. The use of the Maudsley Personality Inventory in Predicting Cadet Adjustment at West Point. Office of Institutional Research proposal, 15 May 1975.
11. Priest, R. Changes in the Attitudes of Upper Class Cadets Toward the Admission of Women. Memorandum for the Director of Institutional Research, 9 November 1976.

# REFERENCES

1. Astin, A., King, M., Richardson, G., The American Freshman: National Norms for 1975. Cooperative Institutional Research Program of the American Council on Education and the University of California, Los Angeles. Los Angeles, Calif, 1976.
2. Bridges, C.F., Changes in Commitment of USMA Cadets to a Military Career. Report 1B5.08-66-003, Office of Research, U.S. Military Academy, West Point, N.Y., November 1969 (b).
3. Bridges, C.F., Evaluation of USMA's Special Admissible Candidate Meetings. Report 7T-001, Office of the Director of Institutional Research, West Point, N.Y., July 1976.
4. Bridges, C.F., Research Study on Military Career Commitment. Report 7B-508-66-002, Office of Research, U.S. Military Academy, West Point, N.Y., October 1969 (a).
5. Butler, R., & McLaughlin, G.W., Dimensions of Job Satisfaction - Dissatisfaction and Their Relationships to Military Commitment and Retention Among U.S. Military Academy Graduates. Report 71-005, Office of Institutional Research, U.S. Military Academy, West Point, N.Y., June 1971
6. Butler, R.P., Military Career Commitment Gradient Scores and Officer Retention. Report 74-004, Office of the Director of Institutional Research, U.S. Military Academy, West Point, N.Y., August 1973 (b).
7. Butler, R.P., Some Correlates of the Military Career Commitment Gradient. Report 74-002, Office of the Director of Institutional Research, West Point, N.Y., July 1973 (a).
8. Fitzgerald, F. & Cochran, C.L., Who Goes to the Naval Academy. Paper given at the 1976 Regional Meeting of the Inter-University Seminar on Armed Forces and Society, Air Command and Staff College, Maxwell AFB, Alabama, Oct 22-23, 1976.
9. Gurin, P., Gurin G., Lao, R. & Beattie, M., Internal-External Control in the Motivational Dynamics of Negro Youth, Journal of Social Issues, 1969.
10. Hays, W., Statistics for Psychologists, New York: Holt, 1963.
11. Helmreich, R., Stapp, J., & Erwin, C., The Texas Social Behavior Inventory (TSBI): An Objective Measure of Self-Esteem or Social Competence. Journal Supplement Abstract Service. Catalog of Selected Documents in Psychology, 1974, 4, 79.
12. Helmreich, R., Stapp, J., Short Forms of the Texas Social Behavior Inventory (TSBI): An Objective Measure of Self-Esteem. Bulletin of the Psychonomic Society, 1974, 4(5A), 473-475.
13. Helmreich, R., Beane, W., Luckner, W., & Spence, J.T., Achievement Motivation and the Science Citation Index. American Psychologist, 1977, in press.
14. Houston, J., Characteristics of the Class of 1980. Report 7T-006, Office of the Director of Institutional Research, September 1976.



15. Janowitz, M. The Professional Soldier, Free Press, Glencoe, Ill. 1971.
16. JSAS Catalog of Selected Documents in Psychology, 1974,4,43(MSNO.617).
17. Marron, J. The Socioeconomic Background and Performance of West Point Graduates. Office of Institutional Research, May 1972. Report 72-034.
18. Marron, J. A Sociopsychological Study of Early Resignations (A Replication) Report 72-031, West Point, N.Y., Office of Institutional Research, March 1972.
19. Meyer, V. Psychological Effects of Brain Damage. In H. Eysenck (ed) Handbook of Abnormal Psychology: An Experimental Approach, New York: Basic Books, 1960.
20. Peterson, J., Vogel, J.A., Kowal, D. & Tomasi, L.F. Project 60: A Comparison of Two Types of Physical Training Programs in the Performance of 16 - 18 year Old Women. West Point, N.Y., United States Military Academy, 3 May 1976.
21. Priest, R. & Houston, J. Analysis of Spontaneous Cadet Comments on the Admission of Women. Report 76-014, West Point, N.Y., U.S. Military Academy, Office of the Director of Institutional Research, May 1976.
22. Priest, R. Cadet Attitudes Toward Women - 1975. Report 76-015, West Point, N.Y., U.S. Military Academy, Office of the Director of Institutional Research, May 1976. (a)
23. Priest, R. The Effect of Company and CBT Testing Day on New Cadet Attitudes, Class of 1980. Report 7T-008, Office of the Director of Institutional Research, U.S. Military Academy, West Point, N.Y. September 1976 (b)
24. Priest, R. Sex Differences in Objective Test Scores: West Point Cadets vs College Females and High School seniors, Male vs Female. Report 76-003, Office of the Director of Institutional Research, U.S. Military Academy, West Point, N.Y., October 1975.
25. Priest, R. Who are the West Point Cadets? Paper delivered at the Southeast Regional Meeting of the Inter University Seminar on Armed Forces and Society, Air Command and Staff College, Maxwell AFB, Alabama, October 22 - 23, 1976(c).
26. "Religion in America - 1976" (No author) The Gallup Opinion Index, May 1976, Report 130.

27. Rotter, J.B., Generalized Expectancies for Internal versus External Control of Reinforcement. Psychological Monographs, 1966, 80, whole no 609, 1-28.
28. Schloemer, R. & Myers, G., Making It At the Air Force Academy - Who Stays - Who Succeeds. Paper given at the 1976 Regional Meeting of the Inter-University Seminar on Armed Forces and Society. Air Command and Staff College, Maxwell AFB, Alabama. Oct 22-23, 1976.
29. Sarason, I.G. & Ganzer, V.J., Anxiety, reinforcement, and experimental instructions in a free verbalization situation. Journal of Abnormal and Social Psychology, 1962, 65, 300-307.
30. Spence, J.T., Helmreich, R. & Stapp, J., The Personal Attributes Questionnaire: A Measure of Sex-Role Stereotypes and Masculinity Femininity. Journal Supplement Abstract Service. Catalog of Selected Documents in Psychology, 1974, 4, 43.
31. Spence, J.T., Helmreich, R. & Stapp, J. A Short Version of the Attitudes Toward Women Scale (AWS). Bulletin of the Psychonomic Society, 1973, 2 (4), 219-220.
32. Spence, J.T. & Helmreich, R., The Attitudes Toward Women Scale: An Objective Instrument to Measure Attitudes Toward the Rights and Roles of Women in Contemporary Society. Journal Supplement Abstract Service. Catalog of Selected Documents in Psychology, 1972a, 2, 66.
33. Stauffer, R., Comparison of United States Military Academy Men and Women on Selected Physical Performance Measures. Project Summertime. Office of Physical Education, U.S. Military Academy, West Point, N.Y., October 1976.
34. Vitters, A. & Kinzer, N., Preliminary Report on Women Cadets at the United States military Academy. Paper given at the 1976 Regional Meeting of the Inter-University Seminar on Armed Forces and Society. Air Command and Staff College, Maxwell AFB, Alabama, October 22-23, 1976.

# APPENDIX 1: ITEM VARIABLES USED IN COMPUTING CUMULATIVE SCALE SCORES

## 1. PRELIMINARY CALCULATIONS: DSR211J

MISSING VALUES COMPANY TO SEX(0)/  
 RECODE HS2(1=0)/COLLEGE(1=0)/FAMIL49(3=0)/FAMIL50(1=0)/  
 PAI80(1=0)/EQUL187(3=0)/AW01 TO AW25(0=25) (1=10) (2=20) (3=30)  
 (4=40)/AINF62(1=0)/  
 COUNT MIE1=SIE188(1),SIE189(2)/MIE2=SIE190(1),SIE191(2)/  
 COUNT COURSES=CORS6 TO CORS19(1)  
 COUNT ROTTERIE=IE152,IE156,IE157,IE159,IE166,IE167,IE168,IE170,IE171,  
 IE173,IE175,IE179(1) IE153,IE154,IE155,IE160,IE162,IE163,IE165,  
 IE172,IE176,IE178(2)  
 COUNT INCRESC=COMT36 TO COMT46(1)  
 COUNT EQUALITY=EQUL183 TO EQUL186(1)  
 COMPUTE PORTER=OCS64+OCS65-OCS66+OCS67+OCS68+OCS69-OCS70+OCS71  
 -OCS72+OCS73-OCS74-OCS75+OCS76+OCS77-OCS78  
 COMPUTE AWS=AW01+AW04+AW05+AW10+AW13+AW14+AW15+AW16+AW17+AW19+AW20+AW22+  
 AW23+600-AW02-AW03-AW06-AW07-AW08-AW09-AW11-AW12-AW18-AW21-AW24  
 -AW25  
 COMPUTE AWS=RND((AWS-250)/10)

## 2. FINAL CALCULATIONS: DSR211J2

FILE NAME DSR211J2,SUMMARY OF CL1980 ATTITUDES BEFORE BEAST  
 COMPUTE CLUBMEM=CLUBS20+CLUBS21+CLUBS22+CLUBS23  
 RECODE LOCAN203 TO LOCAN220(0=3)  
 RECODE COMPT281 TO COMPT299(0=3)  
 COMPUTE DAY=COMPANY  
 RECODE DAY(1,2,3,=4) (5,6,7=8)  
 COMPUTE SXD=SEX+(DAY/2)-2  
 IF ((SEX\*DAY) EQ 0)SXD=0  
 COUNT MIE4=SIE192 SIE194(1) SIE193(2)  
 COUNT NMIV=PAI88 TO PAI90, TAQ316 TO TAQ318(0)  
 RECODE PAI82 TO PAI90(0=3)  
 COMPUTE E=(53-(PAI82+PAI83+PAI84-PAI85+PAI86-PAI87+PAI88-PAI89-PAI90)\*2)  
 COMPUTE FEAR=ENV221+ENV222+ENV223+ENV224+ENV225+ENV226+ENV227  
 +ENV228+ENV229+ENV230+ENV231+ENV232+ENV233+ENV234+ENV235  
 +ENV236+ENV237+ENV238+ENV239+ENV240  
 RECODE PAQ241 TO PAQ254 (0=3)  
 COMPUTE ANDRM=PAQ241+PAQ242+PAQ244+PAQ246+PAQ250+PAQ251  
 +PAQ257+PAQ259+PAQ260+PAQ264  
 COMPUTE ANDRF=PAQ243+PAQ245+PAQ247+PAQ248+PAQ249+PAQ252+PAQ253  
 +PAQ254+PAQ255+PAQ256+PAQ258+PAQ261+PAQ262+PAQ263  
 COMPUTE TSBI=CONFD266+CONFD267+CONFD268+CONFD269-CONFD270  
 +CONFD271+CONFD272+CONFD273+CONFD274+CONFD275-CONFD276  
 -CONFD277+CONFD278-CONFD279+CONFD280  
 COMPUTE WFO=COMPT281-COMPT282-COMPT283+COMPT284+COMPT285-COMPT286  
 -COMPT287-COMPT288-COMPT289-COMPT290-COMPT291+COMPT292  
 -COMPT293-COMPT294+COMPT295+COMPT296+COMPT297-COMPT298  
 +COMPT299



COUNT	TESTANX=TAQ303 TAQ304 TAQ306 TO TAQ316 TAQ318(1) TAQ304 TAQ317(2)
COMPUTE	P=(39-PORTER*.77)
COUNT	SCHOL=SCH34 TO SCH37(1)
COUNT	TRY=NOM39 TO NOM42(1)
COUNT	GET=NOM43 TO NOM46(1)
COUNT	MILBACK=FAMIL48 TO FAMIL50(0)
RECODE	MILBACK(2,3=1)
RECODE	AINF57(1,2=3)
COMPUTE	PRIORED=COLLEGE
RECODE	PRIORED(3,4,5=2)(0=1)
COUNT	EMOTE=FEEL180 TO FEEL182(1)
COMPUTE	XPROD=0
DO	\$V1=EXPEC47 TO EXPEC98/ \$V2=DESIR99 TO DESIR150/ XT=0
COMPUTE	(\$V1 LT 3 and \$V2 LT 3)XT=1
IF	XPROD=XPROD+XT
COMPUTE	
DOEND	
COMPUTE	ANDRM=2.079*ANDRM-28.62
COMPUTE	ANDRF=1.885*ANDRF-38.36
COMPUTE	TSBI=1.483*TSBI+2.98
COMPUTE	WFO=1.3385*WFO+46.983
COMPUTE	FEAR=0.557*FEAR+14.37

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report compares men and women cadets in the Class of 1980 at the time they entered West Point in the Summer of 1976 on a wide variety of measures. It reports similarities and differences in physical and mental aptitudes, background, motivation, and attitudes. The largest differences, in absolute terms, are associated with physical aptitude. Among attitude variables the two genders were equal in military career motivation but very different in attitudes toward the role of women in society. The limitations and implications of the findings are discussed in the body of the report.		

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